



Annex B: Emergency Support Function #2 – Communications

July 2022

Coordinating Agency

Hamilton County Communications Center

Supporting Agencies

Hamilton County Developmental Disability Services
Hamilton County Emergency Management & Homeland Security Agency (EMHSA)
City of Cincinnati Enterprise Technology Solutions (ETS)
City of Cincinnati Fire Department
Greater Cincinnati Hazardous Materials Unit
Hamilton County Amateur Radio Emergency Service (ARES)
UC Health Air Care & Mobile Care

Introduction

Purpose

The purpose of Emergency Support Function (ESF) #2 – Communications is to establish how activities related to communications and communication infrastructure will be coordinated during and after disasters to meet the emergency needs of Hamilton County, OH. This ESF describes the operational components as well as roles and responsibilities of the agencies necessary to fulfill the duties of ESF #2.

Scope

ESF #2 serves to coordinate activities related to communications and communication infrastructure in Hamilton County during the response and recovery phases of the emergency management cycle. During and shortly after the incident, ESF #2 is responsible for the assessment of damages to communication infrastructure, the development of alternate communication methods, and the identification of potential communications resources in support of Logistics Coordination Support Section in the Hamilton County Emergency Operations Center (EOC) and in support of Incident Command as requested.

Activities of ESF #2 include supporting communication activities, addressing communication challenges, and coordinating with public and private sector partners to expedite restoration and repair of telecommunication services.

Situation

Disasters can affect the ability to communicate by damaging network systems and equipment and/or their supporting infrastructure, network congestion/overload from surging telecommunications demand, and creating conditions that prevent the expedient repair of existing communications systems or transport of new equipment into the affected area. Local and county-level communications are vital in order to protect life and property and restore the affected area to pre-disaster conditions.

Hamilton County has a robust communications system that supports all facets of its Emergency Management Program, including implementation of this EOP as well as supporting other plans such as the Disaster Recovery Framework, Continuity of Operations, and even Continuity of Government. The system that exists must not only have redundancies in place in case of failure of the primary system but must also

be able to adapt to the different operating environments that result from the multitude of hazards that could affect Hamilton County and its communications infrastructure.

Within Hamilton County the following communication resources exist:

- Two Primary Public Safety Answering Points: Hamilton County Communications Center (HCCC) and City of Cincinnati Emergency Communications Center (ECC).
- The Ohio Multi-Agency Radio Communications System (MARCS) network, which both the Hamilton County and City of Cincinnati radio systems are a part of.
- Hospital Disaster Net/SurgeNet for patient allocation in a mass casualty incident.
- Command 400 for radio caches, satellite with priority internet and cellular service, backup dispatching capabilities, remote patching, and expansive radio template.
- Amateur Radio Emergency Services (ARES).
- Two cradlepoint routers from AT&T FirstNet which provide data connection for internet access when cellular networks are functioning.

Assumptions

Planning requires assumptions based on statistics, history, behavior patterns and likely future trends. The following assumptions were made for ESF #2:

- ESF #2 will assist local emergency organizations with setting up and operating temporary emergency communications capabilities as needed.
- The Hamilton County EOC will be operational during large scale emergencies and will support countywide communications operations.
- The loss of some or all telephone service may reduce or eliminate the effectiveness of the County's EOC and/or other County department offices.
- State and local governments, in coordination with the telecommunications industry, will assist the county in accomplishing as much restoration and reconstruction of telecommunications facilities as conditions permit.
- If electronic emergency information systems are not available, redundant incident management documentation protocols may be required (e.g., ICS forms filled out and distributed on paper).

Concept of Operations

Emergency Support Function (ESF) #2 – Communications consists of three broad activities in relation to the Hamilton County Emergency Operations Plan. These activities are:

ESF #2 Activities	
1.	Supporting Communication Activities
2.	Addressing Communications Challenges
3.	Coordinating with Private Sector Telecommunication Partners

Supporting Communication Activities

One of the most important issues to address is the ability for personnel involved in emergency response to communicate with one another. This ranges from on-scene first responders communicating with one another to county agencies communicating with neighboring jurisdictions and/or the State of Ohio.

Radio Communications

Hamilton County has two Primary Public Safety Answering Points (PSAPs): Hamilton County Communications Center (HCCC) and City of Cincinnati Emergency Communications Center (ECC). The City of Loveland's Northeast Communications Center is a secondary PSAP because emergency calls are transferred to it by a primary PSAP, HCCC. Routine radio communications for all jurisdictions in Hamilton County are overseen and managed by the HCCC and ECC. In the event a disaster disrupts or impacts communications in the County, HCCC will coordinate efforts to restore communications, with the exception of the City of Cincinnati which will be handled by the ECC.

Both the Hamilton County and City of Cincinnati radio systems are part of the Ohio Multi-Agency Radio Communications System (MARCS) network, which improves communications interoperability statewide. To support first responders in the field, Hamilton County and the City of Cincinnati provide a joint communications network on the MARCS 800 MHz band, which is P25 compliant. This system provides clear-voice capabilities and can link local, county, and state entities. Hamilton County and the City of Cincinnati each provide a network template for radios depending on their needs and can adapt the templates as needs change. These templates allow for all responders, hospitals, jurisdictions, and other relevant entities within Hamilton County to manage communications between personnel and agencies and access the appropriate radio channels in an emergency. Contiguous county's also have the ability to access Hamilton County's radio channels.

For intra-county interoperability, Hamilton County utilizes countywide tactical channels, also called tactical talkgroups, assigned by incident. Agencies/departments that border other counties can share with each other their countywide tactical channels. Northern Kentucky and Dearborn County, Indiana have MARCS radios with the ability to tune into Hamilton County tactical channels. Large incidents that involve agencies that do not border and do not routinely provide mutual aid utilize regional or statewide tactical channels. In case of disaster, there are dedicated frequencies for all responding jurisdictions to communicate on. In a disaster requiring regionwide interoperability, an ICS 205: Incident Radio Communications Plan (See Tab A) will be developed and disseminated to the appropriate partners.

FEMA's Core Capabilities – ESF #2

- **Operational Coordination** – By ensuring first responders can speak with one another during active incidents, ESF #2 helps ensure a unified and coordinated operational structure and process that appropriate integrates all critical stakeholders exists.
- **Operational Communications** – The routine support and ongoing maintenance of Hamilton County's communications systems ensures the capacity for timely communications in support of security, situational awareness, and operations, by any and all means available, among and between affected communities in the impact area and all response forces.
- **Infrastructure Systems** – Communications infrastructure is one of the critical infrastructures identified within Hamilton County. Efficiently restoring any disruptions to the communications infrastructure can greatly enhance the County's ability to restore and revitalize other critical infrastructure systems.
- **Access Control and Identity Verification** – Hamilton County Communications Center and the City of Cincinnati Emergency Communications Center are responsible for ensuring communications channels are secure and sensitive information shared to Mobile Data Computers (MDCs) is protected.

Ohio Homeland Security Region 6, which includes Hamilton County, has developed a Regional Tactical Interoperability Communications Plan (RTICP) that discusses interoperable communications in the region. One of the primary goals of the RTICP is to establish and maintain operable and interoperable local, regional, and statewide public safety voice and data communications systems.

Hospitals within the region have their own radio talkgroup called the Disaster Radio Network, that can be activated during a mass casualty or hazardous materials event. It is part of the County's 800 MHz MARCS network and is regulated by the Greater Cincinnati Disaster Preparedness Coalition Emergency Response Plan. HCCC is responsible for activating the Disaster Radio Network. Once the system has been activated, all responders monitoring the event are notified of the activation and hospitals are directed to go into the online SurgeNet system to update their bed capacity and supply availability. After HCCC has activated the radio network, UC Health Air Care & Mobile Care is responsible for net control. Net control consists of monitoring the online SurgeNet system to figure out the best system for patient hospital allocation during the mass casualty incident and conveying that information to the on-scene Transportation Officer.

The Disaster Radio Network has a redundant system with Rave Alert. Any time the Disaster Radio Network is activated, an HCCC Supervisor will send out a Rave Alert notification to the relevant entities through text, email, and voice.

Regional Operations Center Communications

As well as the communication resources discussed in the Basic Plan above, the City of Cincinnati Enterprise Technology Solutions (ETS) manages the telephone capabilities that exist in the Regional Operations Center (ROC). These capabilities include trunk lines, digital and analog phones, cellular phones, and fax machines. The telephone switch, which supports the Regional Operations Center telephone system, as configured, serves multiple independent telephone instruments.

In addition to traditional radio and cellular telephone communications, communication may also occur through data transmission. At the ROC, data communication is enhanced by dedicated T1 data links. Internal data service is provided through servers that provide for the routing and distribution of information for day-to-day and emergency activities.

The Hamilton County EOC may also utilize public address systems, smart phones, email, voice mail, or even written documents delivered by personnel to facilitate communications. If electronic emergency information systems are not available, redundant incident management documentation protocols may be required (e.g., paper logs may be used to record events, communications, and messages; damage assessments; situation reports; resources utilized; staff hours expended, etc.).

Supplemental Communication Assets

Command 400 is a vehicle equipped with numerous communication capabilities located within Hamilton County that is available for use in the region. The unit can act as a backup dispatch location in the event HCCC or ECC's primary operating sites are impacted by disaster. A cache of 24 radios is always stored on the unit with an additional 60 radios available upon request. Encrypted radios for special response teams are also available upon request. Command 400 comes equipped with a satellite that has priority internet and cellular service, in the event cellular or network towers are impacted. The vehicle can remotely patch radios together for interoperability, providing partners without MARCS compatibility the ability to communicate with local entities. Command 400 also has a radio template that is more comprehensive than Hamilton County or the City of Cincinnati's, which allows them to communicate with more than 10 surrounding counties and the State of Indiana.

Hamilton County can utilize the ARES team, which has a radio room at the ROC. This team can communicate with other amateur radio members around the region to facilitate information sharing from the field, partner agencies, the State, and even the federal government. In the event the MARCS network is disrupted or destroyed, ARES operators retain the ability to communicate with each other through the VHF (very high frequency) and UHF (ultra high frequency) networks. Their capabilities are resilient and can operate without a power supply, MARCS network, internet, or cellular service.

ARES has operators that can be dispatched to the incident or other critical nodes of communication. This allows for entities out in the field to maintain communications with the County EOC and the County EOC with the State. ARES has a system of towers and repeaters in the county and surrounding areas allowing for long range communications with OEMA and NWS's Wilmington office. During large events, ARES will activate their net control at the ROC's radio room, maintaining redundant communication systems in case communication capabilities are disrupted/destroyed.



Above: Command 400, a regional asset managed by the Greater Cincinnati HazMat Unit. **Left:** Command 400 interior.

Addressing Communications Challenges

One of the most important activities for ESF #2 will be to address communications challenges that arise as a result of the disaster. Because disasters may affect the ability for first responders and other agencies involved in the response to communicate with one another, ESF #2 will need to be able to address these communications challenges. The challenges may be a result of damaged or overloaded systems and equipment, or personnel and agencies that are brought in to assist with the response being unfamiliar with or unable to use the existing systems within Hamilton County.

The State maintains three MARCS 80-foot tower on wheels (TOWs) units that Hamilton County can request through Ohio Emergency Management Agency (OEMA). TOWs are portable with a standalone radio system, independent power supply, and 19 talkgroups. They are utilized in the event the 800 MHz network is not functioning by establishing a separate radio network that all MARCS radios can communicate on. Each TOWs unit comes with a stockpile of 200 additional radios that can be utilized as necessary for interoperability among all responding entities.

HCCC retains two AT&T FirstNet cradlepoint routers, which provide a data connection for internet access. The cradlepoint routers rely on a cellular network for their connection, meaning they are only effective if phone towers have not been impacted. The routers are compact and portable, approximately the size of a briefcase, making them easily deployable.

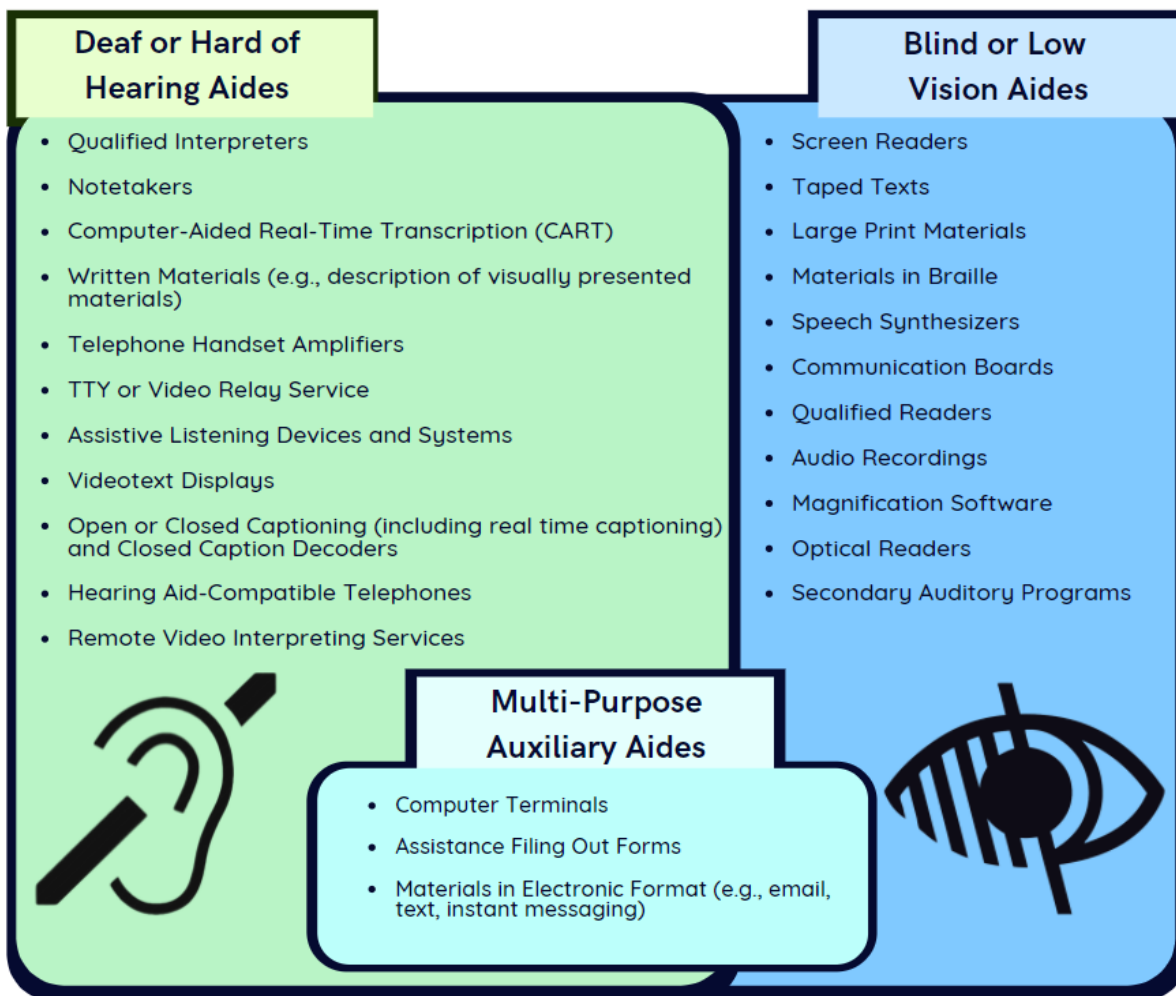
If an incident disrupts power, the dispatch centers, ROC, and numerous fire departments are protected by generators and uninterruptible power supplies. The HCCC, ECC and the Hamilton County EOC have identified alternate sites that operations can be conducted from in the event their primary operating facilities are impacted. Should radio or cellular towers be compromised, an amateur radio room is located in the ROC. In the event of a complete MARCS network failure, select members of ARES will operate from the amateur radio room at the ROC and will establish an emergency network within the city, county, state and national amateur radio networks, based on identified needs.

Not all communications challenges can be pre-identified, and ESF #2 will first need to be able to understand and diagnose what is causing communications issues. Once the challenge is properly understood, ESF #2 should work with its partners, both public and private, to determine the best possible solution for addressing the issue. Potential solutions could range from patching out-of-state partners into the existing 800 MHz MARCS network, to utilizing amateur radio operators when cellular services are overwhelmed, to requesting mobile cell sites from state or private sector partners to augment existing infrastructure. ESF #2 must understand the current operating environment for communications and address any deficiencies that arise due to a hazard.

Access and Functional Needs Populations

Under Title II of the ADA, all state and local governments are required to take steps to ensure that their communications with people with disabilities are as effective as communications with others. All written and spoken communications must be as clear and understandable to people with disabilities as it is for people without disabilities. Equal access to communications for people with disabilities may be provided through auxiliary aids and services (devices or services that enable effective communication for people with disabilities).

Title II of the ADA requires government entities to make appropriate auxiliary aids and services available, upon request, to ensure effective communication. Information about the location of accessible services, activities, and facilities must be made available in a format that is accessible to people who are deaf or hard of hearing and those who are blind or have low vision. ESF #2 will work with ESFs #8 and #15 to ensure the necessary written/spoken communications are compliant with Title II of the ADA.



Above are examples of different auxiliary aids and services that may be used to provide effective communication for people with disabilities. Note: the individual with the disability must be consulted to determine which auxiliary aid or service will be effective for their situation.

Coordinating with Private Sector Telecommunication Partners

Much of the communications infrastructure that Hamilton County is dependent on is owned and operated by private sector partners. These partners include regional and national telecommunications service providers (e.g., AT&T and DLM Communications), communication equipment providers (e.g., MobilComm), and internet providers (e.g., Altafiber, formerly Cincinnati Bell). ESF #2 will work with these private sector partners to identify and prioritize repair and expedite restoration of communication services to important sectors that depend on communications for response.

Numerous common carriers (e.g., AT&T, Verizon, T-Mobile, Sprint, etc.) provide cellular telephone services across Hamilton County. Many first responders and government workers also have Government Emergency Telecommunications Service (GETS) and Wireless Priority Service (WPS) cards. GETS provides priority access and prioritized processing in the local and long-distance segments of landline telephone networks. WPS provides priority calling on all nationwide and several regional cellular networks. These cards are part of the Telecommunications Priority Service. Calls made with GETS and WPS overcome network congestion and/or degradation. The purpose of these services is to give priority service on phone lines to emergency management and first responder agencies.

HCCC, as a subscriber to AT&T's FirstNet, can request deployable communications support equipment for no additional cost. FirstNet maintains a fleet of approximately 90 Satellite Cell on Light Trucks (SatCOLTs) and Compact Rapid Deployables (CRDs), including Cell on Wheels (COWs), throughout the U.S. SatCOLTs are vehicles with mobile cell sites that connect via satellite and do not rely on commercial power supply, while CRDs are small portable cell sites that provide temporary internet and wireless coverage to locations where coverage is minimal or compromised. This allows responders and government workers with FirstNet service to continue communications in the event phone/network towers are damaged and/or destroyed. Deployable units are currently dispatched both for disaster recovery and to provide additional capacity for select activities (i.e., planned events, mutual aid requests, etc.).

Organization and Assignment of Responsibilities

The Hamilton County Communications Center (HCCC) has the primary responsibility for the communication functions in Hamilton County. The HCCC will serve as the Coordinating Agency for ESF #2.

Coordinating Agency Responsibilities

Hamilton County Communications Center will:

1. Coordinate the activities of Support Agencies within ESF #2 to fulfill operational objectives.
2. Direct the activities of ESF #2 in conjunction with assistance from ESFs at the local, State, or Federal levels as applicable.
3. Collaborate with other Coordinating Agencies to ensure an effective response between ESFs.
4. Designate sufficient representatives (no less than three) to support/staff 24-hour operations at the Hamilton County EOC. The Hamilton County EMHSA will maintain listings of these personnel, contact information, and directions for contacting them in the event of communication outages.
5. Train all staff responsible for implementing ESF #2 on standard operating procedures.
6. Share ESF #2 activity information with appropriate EOC personnel.
7. Prioritize ESF #2 operational strategies in alignment with the EOC and on-scene objectives.
8. Assess communications infrastructure following a disaster.
9. Provide technical assistance regarding communications issues to local personnel.
10. Provide ongoing maintenance and restoration to county-owned systems.

11. Request transportable communications systems to include radio base stations, satellite links, and portable communications equipment.
12. Coordinate the establishment of video conferencing links as needed.
13. Support ESF #5 by developing ICS 205 and other incident communication plans as requested.
14. Identify temporary communication solutions to be implemented when primary systems are unavailable or overwhelmed.
15. Establish and maintain operational awareness of communications activities through direct communications links with units in the field, others PSAPs, and/or their appropriate coordinating agencies (other local agencies with communication responsibilities, private sector partners, etc.).
16. Provide and/or coordinate County communication resources as necessary.
17. Conduct communication disaster impact and needs assessments.
18. Receive, manage, and track resource requests for ESF #2 in accordance with established resource management procedures.
19. Coordinate with ESF #15 – Emergency Public Information for the inclusion of appropriate information for public dissemination.
20. Review and discuss with ESF #15 any infrastructure impacts that may affect public notifications and assist in finding alternate methods of notification dissemination.
21. Provide longer-term coordination of the restoration and recovery of the affected communications systems and infrastructure if required.
22. Assist in the development of the After-Action Report. This report is a detailed, written analysis of the strengths and weaknesses of county-level emergency response and short-term recovery activities based upon extensive research of the event and interviews with participating assessment, response, and short-term recovery personnel.

Supporting Agencies Responsibilities

Hamilton County Developmental Disabilities Services will:

1. Provide personnel, training and services to assist local organizations in providing for the emergency needs of persons with access or functional needs.
2. Coordinate with direct service providers for potential resources (i.e., transportation, staff, durable medical equipment, auxiliary aids, etc.).

Hamilton County Emergency Management & Homeland Security Agency will:

1. Manage and maintain communications capabilities within the Regional Operations Center, in coordination with the individual PSAP and their corresponding jurisdictions.
2. Assist in collecting telecommunications-specific information through the use of ESF #5 — Information & Planning during county-level assessment, response, and recovery activities.
3. Assist in coordination of communications capabilities to fill unmet communication requirements.
4. Provide IPAWS activation as needed for emergency notification.
5. Coordinate with OEMA for support as needed.
6. Prioritize assistance based on assessments.

City of Cincinnati Enterprise Technology Solutions (ETS) will:

1. Provide telecommunications technical support for telephone resources within the ROC.
2. Provide technical assistance for the restoration of telecommunications support systems.
3. Support the creation of a phone bank at the ROC, if requested.

Cincinnati Fire Department will:

1. Maintain the thin client computer system needed for the Regional Operations Center.
2. Provide computer technical support to the ROC, Command Room, and Joint Information Center.
3. Provide personnel and equipment as required to support ESF #2 operations.

4. Coordinate data communication links, including video conferencing, for county agency computers as needed in the ROC during emergencies.

Greater Cincinnati Hazardous Materials Unit (GCHMU) will:

1. Deploy Command 400 and other communication assets upon request from the Hamilton County Communications Center.
2. Provide personnel to serve as subject matter experts in the use of GCHMU equipment.

Hamilton County Amateur Radio Emergency Service (ARES) will:

1. Assist local, state and federal agencies and relief organizations with radio communications by providing the ability and means to transmit messages and information in and out of a disaster area when needed.
2. Establish a net control station from which amateur operations will be controlled and administered.
3. Assign each served agency and/or individual area an ARES operator to communicate with the net control operator.
4. Designate a net control operator as required for the handling of formal radio traffic.
5. Coordinate amateur radio frequencies used in the county.
6. Provide a communications network operated by qualified and licensed radio amateurs in accordance with established plans.
7. Determine if a staging net, traffic net, and/or internal net should be established, based on the needs of an incident.

UC Health Air Care & Mobile Care will:

1. Provide net control for the Disaster Radio Network/SurgeNet.
2. Monitor SurgeNet to determine patient allocation during a mass casualty incident and convey that information to the on-scene Transportation Officer.

References

- Ohio Homeland Security Region 6. (2021). *Regional Tactical Interoperable Communications Plan* (version 1.4.1).
- U.S. Department of Homeland Security. (2015). *Communications Sector-Specific Plan. An Annex to the NIPP 2013*. Retrieved from <https://www.cisa.gov/sites/default/files/publications/nipp-ssp-communications-2015-508.pdf>

